

Markhor Junior Contest ®

Pioneer Level (Class VII & VIII) Science 2009

There are 25 questions, and each question carries two marks.

1. A person claims that wearing a crystal necklace improves memory, but gives no testable proof. This is an example of:
 - a) Scientific hypothesis
 - b) Pseudoscience**
 - c) Verified law
 - d) Scientific theory
2. Which of the following is an example of failure due to poor STEM integration?
 - a) A painting without colors
 - b) A building collapse due to wrong calculations**
 - c) A storybook with spelling errors
 - d) A game with boring rules
3. What did Robert Koch prove using a microscope?
 - a) The speed of electricity
 - b) That specific microbes cause specific diseases**
 - c) That vaccines prevent illness
 - d) That metals conduct current
4. Which of these organisms perform cellular respiration?
 - a) Only plants
 - b) Only animals
 - c) Both plants and animals**
 - d) Neither plants nor animals
5. What is the difference between a food chain and a food web?
 - a) Food chains are longer than food webs.
 - b) Food webs are imaginary; chains are real.
 - c) Food webs show many interconnected food chains, while a food chain shows one pathway.**
 - d) Food chains include decomposers, webs do not.
6. What is the role of genes in the body?
 - a) To break down proteins
 - b) To provide energy to cells
 - c) To code instructions for making proteins**
 - d) To digest food

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7. **Why are antibiotics ineffective against viral infections?**
a) Viruses are stronger than bacteria
b) Viruses do not have cell structures targeted by antibiotics
c) Viruses grow only in air
d) The immune system rejects antibiotics
8. **Which international organization plays a key role in global vaccination programs?**
a) NASA
b) IMF
c) World Health Organization (WHO)
d) UNESCO
9. **Which of these human activities can help conserve ecosystems?**
a) Overfishing
b) Cutting trees
c) Afforestation (planting trees)
d) Burning fossil fuels
10. **Which of these is a step toward reducing plastic pollution?**
a) Burning plastics
b) Throwing plastics into rivers
c) Using cloth or paper bags instead
d) Using more bottled water
11. **The term carbon footprint means:**
a) Footprints left on soil
b) Amount of oxygen a person breathes
c) Total greenhouse gases released by an individual or activity
d) Energy from sunlight
12. **Which practice helps conserve non-renewable resources?**
a) Burning more coal
b) Using diesel cars
c) Recycling metals like aluminum and copper
d) Wasting electricity
13. **Planting trees in empty areas to restore ecosystems is called:**
a) Deforestation
b) Afforestation
c) Mining
d) Soil erosion

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14. The charge of an atom in its neutral state is:
- a) Positive
 - b) Negative
 - c) **Zero (neutral)**
 - d) Variable
15. Which of the following is an example of acid-base neutralization in daily life?
- a) Burning coal
 - b) Formation of rust
 - c) **Using antacid tablets to relieve acidity**
 - d) Melting of ice
16. Soil is best described as a:
- a) Compound
 - b) **Mixture**
 - c) Pure substance
 - d) Solution
17. The part of a longitudinal wave where particles are far apart is called:
- a) Compression
 - b) **Rarefaction**
 - c) Crest
 - d) Amplitude
18. What tiny structures inside the cell nucleus carry the inherited characteristics from parents to offspring?
- a) Cytoplasm
 - b) Mitochondria
 - c) **Chromosomes**
 - d) Vacuoles
19. Which agricultural practice can lead to desertification and loss of topsoil?
- a) **Overgrazing by livestock**
 - b) Crop rotation
 - c) Using organic fertilizers
 - d) Afforestation
20. Which statement is true about a chemical compound?
- a) It can be separated by filtration.
 - b) **It has properties entirely different from its elements.**
 - c) Its components are mixed in any ratio.
 - d) It shows the properties of its original components.
21. Work is defined as a force causing an object to move in the direction of the force. What happens to the work done if no movement occurs?
- a) The work done is equal to the force.
 - b) The work done is maximum.
 - c) **The work done is zero.**
 - d) The work done is negative.
22. Which of these elements is a non-metal that is essential for breathing?

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- a) Iron
 - b) Gold
 - c) Oxygen**
 - d) Copper
- 23. Sound travels fastest through which medium?**
- a) Air
 - b) Water
 - c) Vacuum
 - d) Steel (Solid)**
- 24. A cart is pushed with the same force on a smooth surface and on a rough surface. On which surface will the cart gain more speed, and why?**
- a) Rough surface, because friction helps the cart move forward.
 - b) Smooth surface, because friction is lower and less opposing force acts.**
 - c) Both the same, because the applied force is equal.
 - d) Neither, because friction does not affect motion.
- 25. Which statement BEST explains why a basic substance turns red litmus blue?**
- a) Because it increases the temperature of the litmus.
 - b) Because it reacts with the dye to form a new acidic compound.
 - c) Because it decreases the hydrogen ion concentration of the solution.**
 - d) Because it produces water when mixed with the litmus dye.